

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method for navigation during medical interventions on tubular organ structures comprising:

- (a) recording and storing static image data of the tubular organ structures before the intervention,
- (b) extracting the tubular organ structures from the static image data,
- (c) converting the course of the tubular organ structures into a geometric description which is then used during the medical intervention for instrument/organ recording, and
- (d) spatially localizing the instrument position by a tracking system and successively correcting the instrument position in relation to the static image data, by a transformation that is ~~preferably~~ defined by an optimization method, taking into account the geometric description, movement of the tubular organ structures, and information on the previous distance covered by the instrument, or, conversely, the static image data are successively corrected in relation to the instrument position, and thus the position of the instrument is associated with the anatomical structures in the static image data.

2. (Original) The method as claimed in claim 1, characterized in that the information on the distance covered represents the continuously recorded spatial position of the instrument.

3. (Original) The method as claimed in claim 2, characterized in that only the instrument tip is recorded as the spatial position of the instrument.

4. (Original) The method as claimed in claim 2, characterized in that several positions along the instrument are recorded as the spatial position of the instrument.

5. (Original) The method as claimed in claim 2, characterized in that the spatial position of the instrument is recorded continuously along the instrument.
6. (Previously presented) The method as claimed in claim 1, characterized in that the information on the distance covered contains further features which can represent ramifications of the tubular organ structure.
7. (Original) The method as claimed in claim 1, characterized in that the transformation shapes the static image data.
8. (Original) The method as claimed in claim 1, characterized in that the cyclical movements, which can in particular represent respiratory movements, of the tubular organ structure are calculated from the chronologically changing position of the instrument.
9. (Original) The method as claimed in claim 1, characterized in that the movement of the tubular organ structure is computed from the components of the movement of the instrument that are orthogonal to the tubular organ structure.
10. (Previously presented) The method as claimed in claim 8, characterized in that the transformation includes the calculated movements of the tubular organ structure.
11. (Original) The method as claimed in claim 1, characterized in that, by applying external or internal markers, the movement of the tubular organ structure is recorded and included in the calculation of the transformation.
12. (Original) The method as claimed in claim 1, characterized in that the transformation is successively learnt along the distance covered.
13. (Original) The method as claimed in claim 1, characterized in that the geometric description represents the central lines of the tubular organ structure.

14. (Original) The method as claimed in claim 1, characterized in that the geometric description represents the ramifications of the tubular organ structure.

15. (Original) The method as claimed in claim 1, characterized in that the geometric description represents the surface of the tubular organ structure.

16. (Previously presented) The use of the method as claimed in claim 1 in bronchoscopy interventions.

17. (Withdrawn) The use of the method as claimed in claim 1 as a replacement for angiographic imaging in catheter interventions.

18. (Withdrawn) The use of the method as claimed in claim 1 in the implantation of cardiac pacemakers.

19. (Withdrawn) The use of the method as claimed in claim 1 for positioning of probes.

20. (Withdrawn) The use of the method as claimed in claim 1 for positioning of ablation electrodes.

21. (Withdrawn) The use of the method as claimed in claim 1 for positioning of stents in vessels and bronchi.

22. (Withdrawn) The use of the method as claimed in claim 1 for checking the position of a catheter.

23. (Previously presented) The method as claimed in claim 1, characterized in that a generalized movement model of the tubular structure is taken into account in calculating the position.

24. (Previously presented) The method as claimed in claim 1, characterized in that a generalized movement model of the surrounding tissue of the tubular organ structure is included in calculating the position.

25. (Original) The method as claimed in claim 1, characterized in that a patient-specific movement model of the tubular structure is taken into account in calculating the position.

26. (Previously presented) The method as claimed in claim 1, characterized in that a patient-specific movement model of the surrounding tissue of the tubular organ structure is taken into account in calculating the position.

27. (Original) The method as claimed in claim 1, characterized in that the recording is successively improved only at certain time intervals.

28. (Previously presented) The method as claimed in claim 2, characterized in that other parts of the organ tubular structure are recorded by registering the instrument position taking into account the calculated cyclical movements, wherein the cyclical movements, which can represent respiratory movements, of the tubular organ structure are calculated from the chronologically changing position of the instrument.

29. (Original) The method as claimed in claim 27, characterized in that all the information on the tubular structure is obtained from the recorded and movement-corrected instrument positions and is used as (quasi) static information.

30. (Previously presented) The method as claimed in claim 28, characterized in that the recorded collated information can be used at a later time as static information.